

FY2017 Environmental Activity Results

Environmental Targets and Results of Kyushu Electric Power (Summary)

We set numerical targets for all of our key environmental activities as we continually strive to decrease our environmental load.

The specific plans are posted as the Kyuden Group Environmental Action Plan on our website.

Note: t = metric ton (tonne)

Item		Units	Results			FY2017 Target Value*2
			FY2015	FY2016	FY2017	
Initiatives to Address Global Environmental Issues	CO ₂ emission volume per electricity sales volume (post-adjustment)*3 [] are basic emission factors	kg-CO ₂ /kWh	0.528 [0.509]	0.483 [0.462]	0.463 [0.438]	Limit as much as possible*4
	(Note) CO ₂ emissions (post-adjustment)*3 [] are basic emission volumes	10,000 t-CO ₂	4,180 [4,030]	3,750 [3,590]	3,510 [3,320]	
	Electricity sales volume	100 million kWh	792	777	758	
	CO ₂ emissions reductions based on the best available technology (BAT) at new thermal power plants, etc.*5	10,000 t-CO ₂	2.6	26.0	30.4	Reduce as much as possible*5
	Nuclear power utilization rate	%	20.7	31.9	36.7	(wait-and-see stance on target setting and announcements)*6
	Amount of renewable energy facilities installation (total) *7	10,000 kW	—	180	196	400 by 2030*8
	Transmission end thermal power total heat efficiency (higher calorific value base) [] are lower calorific value base-converted values*9	%	39.6 [42.3]	40.4 [43.3]	40.4 [43.3]	(wait-and-see stance on target setting and announcements)*6
	Transmission and distribution loss rate	%	4.58	4.81	4.24	(wait-and-see stance on target setting and announcements)*6
	Office power usage	1 million kWh	54	57	60	About 54 or less
	Purchased copier paper	t	511	509	557	470 or less
	Water supply usage*10	m ³ /person	25	29	31	26 or less*11
	Electric vehicles introduced (total)*12	vehicles	167	167	166	approx. 1,000 by end of FY2020
	General-purpose vehicle fuel consumption rate*13	km/ℓ	12.7	12.7	12.6	12.0 or more
	SF ₆ recovery rate	During machine maintenance	99	99	98	98 or more
		During machine removal	99	99	99	99 or more
Initiatives to Establish a Recycling Society	Recovery implementation rate during machine maintenance for fluorocarbons subject to regulation		%	100	100	100
	Industrial waste recycling rate		%	approx. 100	approx. 100	approx. 100
	Coal ash recycling rate		%	100	100	100
	Non-coal ash recycling rate		%	97	99	98
	External landfill disposal of industrial waste		t	44	148	243
	Waste paper recycling rate		%	100	100	100
Local Environmental Preservation	Green procurement rate*15		%	99	approx. 100	approx. 100
	SO _x emissions per quantity of thermal power generated*17		g/kWh	0.29	0.19	0.19
	NO _x emissions per quantity of thermal power generated*17		g/kWh	0.24	0.17	0.18
Collaboration with Communities	Dose assessment for public in nuclear power plant vicinity (per year)		millisieverts	under 0.001	under 0.001	under 0.001
	Energy/environmental education	Eco-mother activity frequency	times	245	253	200
		On-demand course frequency	times	489	479	529
		Kyuden Play Forest frequency*20	times	—	8	13
		Environmental education in Kuju Kyuden Forest*20	times	—	19	24

*1 The degree to which FY2017 targets were met is rated on a three-tier scale: "🟢 : achieved," "🟡 : mostly achieved (80% or more achieved)," "🔴 : unachieved (under 80% achieved)." Items for which there is no FY2017 target value are delineated with a () to show that they are a comparison with the actual values from FY2016.

*2 Underlined items are revised targets.

*3 Adjusted in line with CO₂ emissions credits and feed-in tariffs (FIT).

*4 Amongst other activities, we strive to ensure that safety is our chief consideration for nuclear power, that we utilize renewable energy, that we improve the already high efficiency of our thermal power plants, that we undertake appropriate maintenance and management and that we provide energy-saving and reduced-CO₂ services which contribute to a low-carbon society, all for the purpose of achieving the targets which have been set for the electric power industry as a whole (emissions factor of approximately 0.37 kg of CO₂ per kWh (usage end) by FY2030).

*5 Among other things, we incorporate the best available technology (BAT) that is economically feasible into our new thermal power plants in order to reduce our environmental load and fully pursue the targets set for the electric power industry as a whole (maximum reduction potential of approximately 7 million metric tons of CO₂ by 2020 and approximately 11 million metric tons of CO₂ by 2030).

(Note) CO₂ emissions per electricity sales volume for FY2016, CO₂ emissions volume and electricity sales volume show only results for retail electricity providers; results are not included for isolated islands overseen by general transmission power providers (excluding the Goto Islands, which are handled as part of mainland Nagasaki Prefecture).

Specific initiatives for each item are described in the following pages (including environmental data), but items likely to be of particular interest to stakeholders are also listed in the “Highlights” section.

Assessment**1		Related Pages
—	As a result of such factors as the restarting and safe operation (except for scheduled maintenance) of the Sendai Nuclear Power Station Units 1 and 2; and the decrease in the proportion of total power generation made up by thermal power thanks to increased use of renewables, the CO ₂ emissions results for FY2017 were 2.4 million metric tons less than FY2016.	17 18
(B)	We have reduced CO ₂ emissions through such initiatives as introducing the best available technology into Shin-Oita Power Station Unit 3x4; updating the high-efficiency steam turbine at Matsuura Power Station Unit. 1; and updating the gas turbines at Shin-Oita Power Station Unit. 1.	29
(B)	The utilization rate was increased to 36.7% due to the return to normal operation of Sendai Nuclear Power Station Units 1 and 2 in 2015, and the resumption of power generation at the Genkai Nuclear Power Station Unit 3 in 2018.	18
(B)	By the end of FY2017, renewable energy sources totaling 1.96 million kW had been introduced. For the future, we will do our utmost as a corporate group to develop and introduce renewable energy which can serve as a proven source of electricity.	19
(B)	Heat efficiency was on a par with FY2016 due to factors such as the stable operation (except for scheduled maintenance) of Sendai Nuclear Power Station Units 1 and 2, resumption of power generation at Genkai Nuclear Power Station Unit 3, and a drop in the operation rate of low heat-efficiency, oil-fired thermal power stations.	29
(B)	Due to a drop in power transmission as a result of lower electricity sales volume, factors such as a decrease in transmission and distribution power loss contributed to a decreased transmission and distribution loss rate.	29
(B)	Despite careful and consistent energy-saving measures, such as proper management of air conditioning usage, reduced lighting and elevator installation and usage; increased air conditioning usage due to elevated average summer temperatures and other factors caused targets to be missed.	—
(B)	The target was missed despite increased use of electronic documents to promote paperless operations, greater efforts to cut down on unnecessary copier usage and a concentrated push to use both sides of paper before discarding.	—
(B)	Despite concerted efforts to reduce water use, there was a reduction in greywater supplied to the main building from the Denki Building Kyosokan, and an increase in tap water usage in the main building, due to an increase in tenants moving into the Denki Building Kyosokan. As a result, the target was missed.	—
(B)	The total number of electric vehicles introduced by the end of FY2017 was 166. From the standpoint of medium-to-long-term global warming mitigation, we are working within our budget to introduce more electric vehicles as company vehicles.	—
(B)	Thanks to careful operation and management, such as vehicle fuel efficiency management and “eco-drive” implementation, as well as performing a planned switch to higher fuel efficiency vehicles, we were able to meet our target.	—
(B)	Thanks to such factors as the careful use of vacuum-type SF ₆ recovery equipment during inspection and removal, we were able to meet our target.	50
(B)	By carefully performing recovery of fluorocarbons subject to regulation, reducing them to the level required by law (i.e., the pressure required by law during removal), we were able to meet our target.	50
(B)	As a result of efforts such as effectively using 100% of coal ash in cement materials and concrete mixtures that exploit its characteristics, and thorough recovery and recycling of industrial waste through company-wide joint recovery efforts, we were able to meet our targets for each recycling rate. However, there was an increase in the amount of industrial waste disposed of at external landfills, and therefore we will continue working hard to always put the 3Rs into practice.	33 34
(B)		—
(B)		34
(B)	Thanks to our ongoing efforts to ensure 100% recycling of waste paper, we were able to meet our target.	34
(B)	Our efforts to perform green procurement as much as possible resulted in roughly 100% green procurement.	—
(B)	As a result of the stable, continuous operation (except scheduled maintenance) of Sendai Nuclear Power Station throughout the year, power generation by oil-fired thermal power plants declined, resulting in SO _x and NO _x results approximately the same as FY2016.	35
(B)		—
(B)	Thanks to proper facilities operation and management of radioactive waste, we were able to meet our target.	—
(B)	Thanks to events involving daycares and other groups throughout Kyushu, we were able to meet our target.	43
(B)	By proactively seeking out primary schools, junior high schools, etc., around Kyushu, we held more courses than in FY2016.	42
(B)	The target was achieved by increasing the frequency of these events, and holding them in forests throughout Kyushu.	43
(B)	The target was met due to proactive efforts led by the Kyuden Mirai Foundation.	42

*6 The outlook for nuclear power is unclear within supply planning, and a wait-and-see stance has been adopted on target setting and announcements.

*7 Amount of facilities introduced by Kyushu Electric Power and its group companies (target results are omitted for FY2015, as this is a new target item established in FY2016).

*8 The Kyuden Group aims to develop 4 million kW of renewable energy (current 1.96 million kW + an additional 2.04 million kW) domestically and overseas by 2030, focusing primarily on geothermal and hydroelectric.

*9 Converted using the Comprehensive Energy Statistics calorific conversion factor, etc.

*10 Value obtained by dividing water use company-wide by the total number of employees (as of the end of the fiscal year in question).

*11 Revised due to increase in water use stemming from restarting of Sendai Nuclear Power Station.

*12 Includes plug-in hybrids.

*13 Excludes electric vehicles.

*14 No target set due to major fluctuations resulting from size, frequency, etc., of repair work.

*15 From among general-use products (office products, miscellaneous goods, etc.), the purchasing ratio of products conforming to socially-recognized standards is included as a reference value.

*16 Qualitative target which is set in light of the fact that this activity is essentially a permanent practice.

*17 Total value of emissions for each thermal power plant (excluding internal combustion power).

*18 Qualitative target due to major fluctuations resulting from utilization rate of oil-fired thermal power plants.

*19 Target revised in light of action plan for FY2017.

*20 Set new targets for initiatives relating to energy and environmental education for the next generation.